



**Request for Quotation# RFQ-303-2016-A-005**

**for**

**Cabinetry and Fixtures at Lakewood's**

**Early Learning and Child Care Centre (ELCC)**

**Appendix D, D-1 and D-2**

**The Deliverables and Material Disclosures**

**Document 3 of 3**

**Procurement and Contracting Requirements Group**

**Division 00 Procurement and Contracting Requirements**

Not Used

**Division 01 General Requirements**

- 01 11 00 Summary of Work
- 01 14 00 Work Restrictions
- 01 26 00 Contract Modification Procedures
- 01 31 00 Project Management and Coordination
- 01 31 19 Project Meetings
- 01 32 00 Construction Progress Documentation
- 01 33 00 Submittal Procedures
- 01 35 29 Health and Safety Procedures
- 01 41 00 Regulatory Requirements
- 01 45 00 Quality Control
- 01 62 00 Product Substitution Requirements
- 01 65 00 Product Delivery Requirements
- 01 78 00 Closeout Submittals

**Division 02 to Division 05**

Not Used

**Division 06 Wood, Plastics, and Composites**

- 06 20 00 Finish Carpentry

**Division 07 to Division 21**

Not Used

**Division 22 Plumbing**

- 22 40 00 Plumbing Fixtures

**Division 23 to Division 48**

Not Used

**End of Table of Contents**

## **1 General**

### **1.1 Section Includes**

- .1 Documents and terminology.
- .2 Associated requirements.
- .3 Work expectations.
- .4 Work by other parties.
- .5 Premises usage.

### **1.2 Related Requirements**

- .1 Section 01 32 00 – Construction Progress Documentation.
- .2 Section 01 78 00 – Closeout Submittals.
- .3 Division 01 sections describe requirements applicable to all Sections within Division 06 and Division 22.

### **1.3 Words and Terms**

- .1 Refer to and acknowledge other words, terms, and definitions in RFP 303-2016 -A.

### **1.4 Complimentary Documents**

- .1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leave doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Project Manager.
- .2 Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.
- .3 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
- .4 Locate devices with primary regard for convenience of operation and usage.

- .5 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of the Project Manager.

## **1.5 Location**

- .1 The site of the Work is located at the Lakewoods Early Learning and Child Care Centre (ELCC), 353 Chaleur Ave., Oshawa.
- .2 The materials and/or services shall be delivered FOB Destination(s), Prepaid.

## **1.6 Description of the Work**

- .1 Work of this Contract comprises of the removal, disposal and replacement of existing cabinetry and washroom fixtures, and any mechanical and electrical modifications as required to accommodate the new installations at the Lakewoods ELCC in the City of Oshawa.
- .2 Hot water, cold water and sanitary drains to be modified if required for new millwork. New hot and cold water shut-off valves to be installed if not present.
- .3 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
- .4 Repair all surrounding materials to be flush with the new millwork.
- .5 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of the Project Manager immediately.
- .6 Refer to the technical specifications and drawings details of the required Work.
- .7 Drawings indicate general location of installed cabinetry and plumbing piping.
- .8 The Work also includes the examination of the site, submission of samples, scheduling and coordination, project meetings, protection of the existing facility, repair and preparation of surfaces, quality control, inspection reports, project cleanliness, maintenance of data, preparation of record drawings, final cleaning and warranty.
- .9 Division of the Work among Subcontractors, suppliers and vendors is solely the Contractor's responsibility. The Region assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

### **1.7 Contract Method**

- .1 Construct Work under single, Lump Sum price contract.
- .2 Assume responsibility for assigned contracts as Subcontracts forming part of the Work.
- .3 Quotation Documents were prepared by the Region. Any use which a third party makes of the Quotation Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Region accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.
- .4 For the purposes of reference in these Quotation Documents, the term “Contractor” shall mean the party in contract with the Region.

### **1.8 Documents Provided**

- .1 The Region will not supply hard copies of contract documents to the contractor for construction purposes.

### **1.9 Performance of the Work**

- .1 Refer to Section 01 32 00 for construction schedule and phasing of the Work.

### **2 Products – Not Used**

### **3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Contractor's use of site.
- .2 Connecting to existing services.
- .3 Site access.
- .4 Continuity of existing service.
- .5 Working hours.
- .6 Special scheduling requirements.

### **1.2 Related Requirements**

- .1 Section 01 33 00 – Submittal Procedures.
- .2 This section describes requirements applicable to all Sections within Division 06 and Division 22.

### **1.3 Contractor's Use of Site**

- .1 Accept full responsibility of assigned work and storage areas from the time of Contract award until Final Completion.
- .2 Coordinate with Regional Department representative's and Project Manager's requirements regarding access and use of site.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Do not obstruct entrances, stairs or fire exits.
- .5 Do not prop open any doors.
- .6 Maintain free access route for fire, ambulance and garbage trucks.
- .7 Parking will be allowed on site. The placement of refuse bin will be allowed in an area agreed by the Project Manager.
- .8 Repair all damage to paving, grass, walkways, curbs, trees, planting beds, and any other landscaping features caused due to the work of this Contract.
- .9 Washroom facilities are available for Contractor's use in the facility.

### **1.4 Existing Services**

- .1 Notify Project Manager and utility companies of intended interruption of services and obtain required permission.

- .2 Where Work involves breaking into or connecting to existing services, give Project Manager, minimum 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work.
- .3 Keep duration of interruptions minimum.
- .4 Perform interruptions after normal working hours of occupants, preferably on weekends.

### **1.5 Elevators**

- .1 There is no elevator on site.

### **1.6 Site Access by Contractor**

- .1 Unless stated otherwise, the Contractor will be permitted reasonable access to the site from start of construction until completion of the Contract.
- .2 After completion of the Contract, obtain written authorization from the Project Manager prior to entering the facility and restrict activities to the work duly authorized by the Project Manager, including modifications and rectification of deficiencies. If additional work other than the authorized work is required, obtain further written approval from the Project Manager prior to proceeding with such additional work.
- .3 Provide a "Daily Register" for workers to sign in and out, showing number of hours worked on each shift. Times shall be recorded in 24-hour time (i.e. 00:00 to 23:59).
- .4 All workers working on site will be required to take orientation training by the Region's staff prior to starting work on site. Ensure all workers have taken such site orientation training.

### **1.7 Continuity of Existing Service**

- .1 In the event of a conflict, operation of the existing facility takes priority over Contractor operations. Arrange work so that services to the existing buildings will not be unduly interrupted at any time.
- .2 Obtain prior approval from the Project Manager for any proposed interruptions to facility operations, and keep such interruptions to a minimum.
- .3 Provide minimum 7 days advanced notice for all required interruptions to utility, heating, cooling, mechanical, electrical and life safety systems.

**1.8 Working Hours**

- .1 The Work of this contract is required after regular working hours – between the hours of 18:00 and 06:00, local time, Monday through Friday, Saturdays except for statutory holidays.
- .2 No additional fees will be paid for working during specified non-regular hours.

**2 Products – Not Used**

**3 Execution – Not Used**

**End of Section**



## 1 General

### 1.1 Modifications to Contract

- .1 The Region may, without invalidating the Contract, direct the Contractor to make changes to the Work.
- .2 When a change in the Work causes an increase or decrease in the Work, the Contract Price shall be increased or decreased by the application of unit prices to the measure of such increase or decrease, or in the absence of applicable unit prices, by an amount to be agreed upon between the Project Manager and the Contractor. All such changes shall be in writing in the form of a Change Order.
- .3 **Supplemental Instructions** will be issued by the Project Manager, and will be consistent with the intent of the Contract Documents and will not involve an adjustment in Contract Price or Contract Time.
- .4 **Proposed Changes** will be issued by the Project Manager, and will notify the Contractor of an impending or proposed change to the Work and will require submission of a quotation from the Contractor. Work outlined in a Proposed Change must not proceed without the issuance of a Change Order signed by the Project Manager.
- .5 **Change Directives** will be issued by the Project Manager where an immediate response is required to an on-site condition. This form will authorize the Contractor to proceed with the change, with the stipulation that accurate accounts of billable costs be recorded.
- .6 **Change Orders** will be issued by the Project Manager upon review and approval of the quotation for a Proposed Change or a Change Directive, authorizes the Contractor to proceed with the changes proposed, and provide agreement of the change in the Contract Price or the Contract Time.
- .7 Rates for Change Orders shall be based on hourly rates in the Contractor's Standing Agreements for the applicable Q-303 Trades Registry in the form of a T&M estimate.

**2 Products – Not Used**

**3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 This Section includes administrative provisions for coordinating construction operations including, but not limited to, the following:
  - .1 General project coordination procedures
  - .2 Coordination of Drawings
  - .3 Administrative and supervisory personnel
- .2 Each Subcontractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to specific Subcontractors by Contractor.

### **1.2 Related Requirements**

- .1 Section 01 32 00 – Construction Progress Documentation
- .2 Section 01 33 00 – Submittal Procedures
- .3 Section 01 45 00 – Quality Control
- .4 Section 01 78 00 – Closeout Submittals
- .5 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Administrative Requirements**

- .1 General Coordination: Coordination that generally applies to all components of the Quotation Documents as follows:
  - .1 Subcontractor shall coordinate construction activities as required with Contractor's Schedule to ensure efficient and orderly installation of each part of Work.
  - .2 Subcontractors shall notify Contractor where the Subcontractor's installation of one part of Work is dependent on installation of other components.
  - .3 Schedule and coordinate construction activities of other Subcontractors in sequence required to obtain best results. Where availability of space is limited, Subcontractor shall coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

- .4 Subcontractors shall make adequate provisions to accommodate items scheduled for later installation by other Subcontractors, under separate contract or by Contractor's own forces.

#### **1.4 Quality Assurance**

- .1 Designate an on-site party responsible for instructing workers and overseeing the environmental goals for the project.
- .2 Review environmental procedures and status of Waste Management Plan and Environmental Protection Plan at each construction meeting.

#### **1.5 Existing Site Conditions**

- .1 Existing construction shown has been taken from available information. When specific details are unavailable, assumptions have been made regarding probable construction. Any variance from construction, as shown on the drawings shall be immediately brought to the attention of the Project Manager.
- .2 Make careful examination of the site, and investigate and be satisfied as to all matters relating to the nature of the Work to be undertaken.
- .3 Check all site dimensions prior to fabrication of materials and construction.
- .4 Confirm the exact location of all outlets with the Project Manager prior to their installation.
- .5 Report any inconsistencies, discrepancies, omissions and errors between site conditions and Contract Documents to the Project Manager prior to the commencement of Work. Ensure that each Subcontractor performing work related to the site conditions has examined it so that all are fully informed on all particulars which affect the Work thereon in order that construction proceeds competently and expeditiously.

#### **1.6 Coordination**

- .1 The Contractor shall cooperate with the Project Manager and the building operator in order to minimize disruptions to the building operation and services.
- .2 Coordinate with the Project Manager and the building operator regarding access and use of site.
- .3 Coordinate performance and sequencing of the Work with the Project Manager.

#### **1.7 Submittals**

- .1 Provide submittals in accordance with Section 01 33 00.

## **1.8 Dimensions**

- .1 Do not scale directly from Drawings. Obtain clarification from the Project Manager if there is ambiguity or lack of information.
- .2 Details and measurements of any Work which is to fit or to conform with Work installed shall be taken at the Place of the Work.
- .3 Verify dimensions at the Place of the Work before commencing Shop Drawings or other submittals. Before fabrication commences report discrepancies to the Project Manager in writing. Incorporate accepted variances on Shop Drawings and as-built records.
- .4 In areas where equipment is scheduled to be installed, check dimensional data on equipment to ensure that the area and equipment, including future known equipment are compatible with necessary access and clearances provided. Equipment supplied shall be dimensionally suitable for space allocation.
- .5 Verify that the Work is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent Work, as set out in accordance with the requirements of the Contract Documents and ensure that Work installed in error is rectified at Contractor's expense before construction continues.
- .6 The Region will accept no claims for extra expense on the part of the Contractor for non-compliance.

## **1.9 Supervision of Work**

- .1 Provide all superintendence, labour, equipment, and materials necessary to complete the project in an orderly, competent, and expeditious manner. While work is in progress, the Contractor must maintain site superintendence capable of acting competently on site instructions given by the Project Manager.
- .2 Maintain good order and discipline among workers engaged on the project.

## **1.10 Maintenance of Documents on Site**

- .1 A copy of all specifications, drawings, written instructions, and changes in work shall be kept on site and shall be available as required.
- .2 Maintain at the job site, one copy of each of following:
  - .1 Contract Drawings
  - .2 Specifications
  - .3 Addenda

- .4 Change Orders and Change Directives
  - .5 Shop Drawings and samples
  - .6 Other modifications to the Contract
  - .7 Site instructions
  - .8 Copy of approved work schedule
  - .9 Copy of manufacturer's installation instructions
  - .10 MSDS sheets
  - .11 Contractor's Health and Safety Policy
  - .12 Notice of Project through MOL (Form 1000)
  - .13 Building Permit
- .3 Maintain documents in a clean, dry, legible condition and make documents available at all times for inspection by the Project Manager

#### **1.11 Security and Protection of Construction Site and Equipment**

- .1 Protect the construction site and equipment from damage. Repair any damage to the construction site or equipment to the satisfaction of the Project Manager.
- .2 Take precautions to protect the site and equipment until final completion.
- .3 The Region will not be responsible for damaged, lost or stolen materials and equipment. The Contractor is responsible for all materials and equipment left on site until the work is complete. The Contractor must provide for proper security or storage of any material or equipment left on site.
- .4 Ensure that the work area is secured during off hours and that all tools and materials are locked up.

#### **1.12 Existing Utilities**

- .1 Protection of all utilities at the Place of the Work for the duration of the work.
- .2 Maintain all existing services including power and data to the entire building and occupied areas of the suites used by the Region. Any and all shutdowns or disruptions in service are to be approved by the Project Manager and the building operator.
- .3 The Contractor will have the Utilities or Agency, stake out the location of all cables and gas lines pertinent to this quotation and provide the Region with all cable locations supplied by the utilities prior to the demolition start date.

- .4 It is the Contractor's responsibility to contact the local Municipality, Utilities or any other Agency for further information in regard to the exact location of all existing utilities, to exercise the necessary care in demolition operations, and to take such precautions necessary to safeguard the utilities from damage.
- .5 All utilities located within the limits of proposed excavations shall be exposed by hand excavation and carefully supported and protected by the Contractor.
- .6 Removal, relocation, or supporting of existing utilities shall be carried out in consultation with the respective authorities:
  - .1 Bell Canada
  - .2 Oshawa PUC
  - .3 Enbridge Gas
  - .4 Rogers Cable
  - .5 or any other utility/contractor as required.
- .7 The Contractor shall be responsible for paying charges by the Utilities or Agencies for locating cables and the Contractor shall pay any charges for repairs and lost revenue if utility equipment, cables, pipes or other assets are damaged and is responsible to make good any ground and surface damages as well.
- .8 Prior to the commencement of demolition, the Contractor will provide a sign off sheet from the existing water, gas, electrical, telephone, and sewer service providers.
- .9 The Contractor is to verify that services are cut off, capped, diverted and/or removed as required by local regulating authorities. It is the Contractor's responsibility to ensure all services are in the proper state prior to commencing work.
- .10 The Contractor shall ensure all utilities are capped off at the property line and shall identify the termination locations on reference drawings.
- .11 No claims will be considered which are based on delays or inconvenience resulting from the removal or relocation of services not being completed before the start of this Contract.

### **1.13 Contact for After Hours or Emergency Services**

- .1 When after-hours work is permitted by the Region, provide an after-hours phone or pager number to respond to emergencies or requirements that arise when offices are closed.

### **1.14 Identification and Signs**

- .1 Construction personnel shall wear a legible numbered identification photo tag on their person at all times on which the name of the employer company is clearly identified.
- .2 Display no signs or advertisements without the Project Manager's approval. When signs are permitted, maintain signs in good condition during the Work and remove signs as directed by the Project Manager upon completion of the Work.

## **2 Products – Not Used**

## **3 Execution**

### **3.1 Coordination**

- .1 Coordinate all construction operations to verify efficient and orderly installation of each part of Work.
- .2 Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation with Subcontractors as follows:
  - .1 Scheduling construction operations in sequence required to obtain best results where installation of one part of Work depends on installation of other components, before or after its own installation.
  - .2 Coordinating installation of different components with Subcontractors to verify maximum accessibility for required maintenance, service, and repair.
  - .3 Making adequate provisions to accommodate items scheduled for later installation.
- .3 Prepare memoranda where necessary, for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings:
- .4 Prepare similar memoranda for Project Manager where coordination of Region-installed Work is required.
- .5 Ensure all Subcontractors coordinate scheduling and timing of required administrative procedures with other construction activities, and activities of



other contractors and Subcontractors, if any, to avoid conflicts and to verify orderly progress of Work.

### **3.2 General Installation Provisions**

- .1 Ensure that installer of each major component inspects both substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- .2 Comply with manufacturer's installation instructions and recommendations, to extent that those instructions and recommendations are more explicit or stringent than requirements contained in Quotation Documents.
- .3 Inspect Materials immediately upon delivery and again prior to installation. Reject damaged and defective items and arrange for replacement.
- .4 Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- .5 Supervise all Subcontractor work. Ensure that Subcontractors:
  - .1 Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to Contractor for final decision.
  - .2 Install each component during weather conditions and project status that will ensure best possible results. Isolate each part of completed construction from incompatible material as necessary to prevent deterioration.
  - .3 Coordinate temporary enclosures with required inspections and tests, to minimize necessity of uncovering completed construction for that purpose.
  - .4 Install individual components at standard mounting heights recognized within the industry for particular applications indicated where mounting heights are not indicated. Refer questionable mounting height decisions to Contractor for final decision.
  - .5 Coordinate construction activities to ensure that no part of Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

### **3.3 Layout of Work**

- .1 Be responsible for laying out the work in compliance with the Contract Drawings, shop drawings and schedules.
- .2 Rectify any and all errors resulting from failure to follow or verify products, drawings or the proper layout of any element of the installation.

### **3.4 Removal, Replacement and Relocation of Existing Items**

- .1 Remove and reinstall or permanently relocate all electrical fitments, outlets, telephone outlets, and any other mechanical, electrical or communications equipment the interferes with construction and modify existing surfaces as indicated on Drawings.
- .2 Provide new enclosures, as required.
- .3 Remove loose furniture and reinstall unless directed otherwise by the Project Manager.

### **3.5 Building and Property Access**

- .1 The building and parking areas, which are not immediately affected by the Work, will remain occupied by the Region during the Work.
- .2 Ensure adequate access to areas not occupied for the Work.

### **3.6 Protection of Existing Facility and Personnel**

- .1 Do not endanger in any way the personnel, equipment, offices and existing structures of the Region and any building occupants. Exercise caution to keep the existing facilities free from damage due to the Contractor's work. If the measures observed by the Contractor are not considered sufficient, the Project Manager may order additional precautions to be taken.
- .2 Take all necessary precautions to adequately protect the building and property from damage. Make good all damage at no extra cost.
- .3 Erect suitable safety barriers as required for security and to make the site safe for pedestrians.
- .4 Supply and erect temporary hoarding and barricades where required. Provide a temporary hoarding plan.
- .5 Remove the barriers from the site at the completion of the work or when directed by the Project Manager.

- .6 Adequately protect the Work at all stages, and maintain the protection until the Work is completed. Remove and replace any work and materials damaged that cannot be satisfactorily repaired at no extra cost.
- .7 Secure construction area by erecting dust proof barriers, hoarding and any other reasonable measures deemed necessary to the approval of the Project Manager and the building operator.
- .8 Arrange dust proof partitions in such manner as not to eliminate fire exit-egress ways and provide safety directional signage to the approval of the Project Manager and any authorities having jurisdiction.
- .9 Protect existing ventilation systems and ductwork interiors from dust contamination from construction area by placing filter media over all duct openings, grilles, diffusers and replacing filters in air handling units upon completion of the work.
- .10 Motorized equipment shall be powered electrically or by battery only. Internal combustion powered equipment shall not be permitted within construction areas unless approved in writing by the Project Manager.
- .11 All materials shall have a low V.O.C. rating.

### **3.7 Cleaning**

- .1 Leave work areas in a tidy, safe and secure condition at the end of each workday.
- .2 Review the site and debris that requires disposal. When it is not feasible to remove debris with service vehicle, a temporary disposal bin shall be used. When a temporary storage bin is used it shall be stored in an area directed by the Project Manager. The Contractor shall be responsible for all associated costs and permits. Do not locate bins on a structural slab. Remove and replace disposal bins promptly when full and upon completion of the work.
- .3 Collect all debris as work proceeds and at the completion of the work each day and store in proper disposal bins.
- .4 Storage of debris outside of the disposal bin will not be allowed overnight.
- .5 Make every reasonable effort to recycle or otherwise salvage the materials removed from the site. Submit a disposal plan to the Project Manager and do not commence work prior to the Project Manager's approval of the disposal plan. Include all disposal costs in bid price.

- .6 Separate and recycle waste materials and dispose of them in accordance with local municipal requirements and policies.
- .7 Dispose of unused paint material at official hazardous material collections site approved by Project Manager.
- .8 Do not dispose of unused paint material into sewer system, into streams, lakes, on the ground or in other locations where it will pose health or environmental hazard.
- .9 Cleaning of the area of the work shall include, but not be limited to:
  - .1 The removal of rubbish and other unsightly material and/or debris from the building interior, face of the building, adjacent ground areas and from the roof surfaces.
  - .2 The removal of dust and other debris from ducts, pipes, window frames, sills and other areas by brushing and/or other suitable methods.
  - .3 As work proceeds remove surplus materials and equipment from the site.
  - .4 Upon completion of the work, leave areas affected in a condition as close to or better than the original.
  - .5 Power wash any surfaces that may have been contaminated as a result of construction activities.
  - .6 In preparation for Completion of the Work, conduct final inspection of the Work and all affected areas. Remove all debris, clean-up shall be to the complete satisfaction of the Project Manager.
  - .7 Place materials defined as hazardous or toxic waste in designated containers. Ensure emptied containers are sealed and stored safely for disposal away from children.
  - .8 The work areas and other areas affected by the work shall be swept, vacuumed with a HEPA filter and appropriately dusted or cleaned on a daily basis to the satisfaction of the Project Manager.

### **3.8 Restoration of Disturbed Areas**

- .1 Fill all holes left from mechanical and electrical services removed or relocated to maintain the required fire separations and to maintain the intended finished appearance of the surface.
- .2 Patch and make good all existing floor, wall and ceiling materials and finishes disturbed by construction work.

### **3.9 Restoration Work for Uncovered Site Hazards**

- .1 Make restorations to uncovered or disrupted mechanical or electrical services where such services pose a potential health or safety risk. Restorations shall be an extra to the contract only where such work could not have been reasonably foreseen by examination at the time of bidding at the sole opinion of the Project Manager.

**End of Section**

## **1 General**

### **1.1 Pre-Construction Meeting**

- .1 Pre-Construction Meeting will be arranged by the Project Manager. The Region's project team and a representative from the facility user department will participate in the meeting.
- .2 Co-ordinate and organize attendance at the Pre-Construction Meeting by representatives of major Subcontractors and other parties in contract with the Contractor.
- .3 Project Manager will arrange attendance of other interested parties not responsible to the Contractor.
- .4 Agenda will include, but not be limited to, the following topics as are pertinent to the Contract:
  - .1 Introduction of key personnel participating in the project
  - .2 Project communications procedures
  - .3 Restrictions on working hours, access, and movements on site.
  - .4 Reviewing the approved Work Schedule
  - .5 Contract administration requirements including submittals, payment procedures, and Change Order procedures
  - .6 Identify any product availability problems and substitution requests and procedures
  - .7 Review Project Manager's inspection requirements
  - .8 Schedule for project meetings
  - .9 Temporary services to be provided by the Contractor
  - .10 Emergency contact numbers
  - .11 Site-specific safety training
  - .12 Site security requirements

### **1.2 Progress Meetings**

- .1 Have key project personnel attend regularly scheduled progress meetings to be held on site at times and dates that are mutually agreed to by the Region and Contractor.
- .2 Co-ordinate and organize attendance of individual Subcontractors and material suppliers when requested. Relationships and discussions between

Subcontractor participants are not the responsibility of the Project Manager and do not form part of the meetings content.

- .3 Ensure that Contractor representatives in attendance at meetings have required authority to commit Contractor to actions agreed upon. Assign same persons to attend such meetings throughout the contract period.
- .4 Inform the Project Manager in advance of meetings regarding all items to be added to the agenda.
- .5 Agenda will include, but not be limited to, the following topics as are pertinent to the Contract.
  - .1 Review and agreement of previous minutes
  - .2 Construction safety
  - .3 Status of submittals
  - .4 Quality control
  - .5 Co-ordination
  - .6 Construction schedule and potential issues that may impact the schedule
  - .7 Work plan up to next scheduled meeting
  - .8 Requests for information/clarification
  - .9 Contemplated changes
- .6 Prepare and distribute Minutes of Progress Meetings

**2 Products – Not Used**

**3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Schedules, form, content, submission.
- .2 Submittals schedule.

### **1.2 Related Requirements**

- .1 Section 01 33 00 – Submittal Procedures.
- .2 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 General Requirements**

- .1 Be responsible for planning and scheduling of the Work.
- .2 Be responsible for ensuring that Subcontractors plan and schedule their respective portions of the Work within the overall project schedule.

### **1.4 Contract Duration / Timing of Work Completion**

- .1 Do not commence work on site until the Owner has issued an Order to Commence Work letter.
- .2 Commence Work within 7 calendar days of receipt of the official Order to Commence Work letter issued by the Region and, subject to adjustment in Contract Time as provided for in the Contract Documents, complete the Work in its entirety within 10 weeks after issuance by the Region of the Order to Commence Work letter.

### **1.5 Construction Progress Scheduling**

- .1 Within 5 working days of receipt of the Order to Commence Work letter, prepare and submit a detailed Construction Schedule clearly showing the anticipated progress stages, start and finish date of each construction phase, project critical path and milestones and date of final completion of the work.
- .2 Work shall not commence until the approval of the Contractor's proposed construction schedule by the Owner.
- .3 If, at any time during construction, the Work is behind schedule, take all necessary measures to expedite Work in order to bring the Work back on



schedule and to complete the Work on time according to paragraph 1.4.1 of this Section.

**2 Products – Not Used**

**3 Execution**

**3.1 Submission**

- .1 Submit Construction Schedule in the form of a Gantt chart clearly identifying the critical path and all project milestones.

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Shop Drawings and product data.
- .2 Samples.
- .3 Certificates and transcripts.

### **1.2 Related Requirements**

- .1 Section 01 32 00 – Construction Progress Documentation.
- .2 Section 01 78 00 – Closeout Submittals.
- .3 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Administrative Requirements**

- .1 Submit to Project Manager submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present Shop Drawings, product data, samples and mock-ups in imperial units.
- .4 Where items or information is not manufactured or produced in SI metric units, converted values within the metric measurement tolerances are acceptable.
- .5 Review submittals prior to submission to Project Manager. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.
- .6 Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be considered rejected.
- .7 Notify Project Manager, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent Work are coordinated.

- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Project Manager's review of submittals.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Project Manager review.
- .11 Keep one reviewed copy of each submission on site.

#### **1.4 Shop Drawings, Product Data and Engineered Submission**

- .1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .2 Shop drawings shall carefully consider architectural intent, and shall be coordinated to ensure items to be exposed in finished work are located to provide best aesthetics as directed or required by the Project Manager. Show orientation and relationships between materials where deemed necessary by the Project Manager.
- .3 Allow seven working days for Project Manager's review of each submission.
- .4 Adjustments made on shop drawings by the Project Manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Project Manager prior, and obtain Project Manager's approval prior to proceeding with Work.
- .5 Make changes in shop drawings as the Project Manager may require, consistent with Contract Documents. When resubmitting, notify the Project Manager in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter, containing:
  - .1 Date
  - .2 Make
  - .3 Company
  - .4 Region's project title and Quotation number.
  - .5 Contractor's name and address.
  - .6 Identification and quantity of each shop drawing, product data and sample.
  - .7 Other pertinent data

- .7 Submissions shall include:
  - .1 Date and revision dates.
  - .2 Project title and Quotation number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
- .8 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .9 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Standards.
  - .4 Relationship to adjacent work.
- .10 After Project Manager's review, distribute copies.
- .11 Submit 1 copy of shop drawings for each requirement requested in specification Sections and as Project Manager may reasonably request.
- .12 Submit 1 copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Project Manager where shop drawings will not be prepared due to standardized manufacture of product.
- .13 Delete information not applicable to project.
- .14 Supplement standard information to provide details applicable to project.
- .15 If upon review by the Project Manager, no errors or omissions are discovered or if only minor corrections are made, 2 copies will be stamped "reviewed" or "reviewed as modified" and returned and fabrication and installation of Work may proceed. If shop drawings are returned stamped "not reviewed", noted copy will be returned and re-submission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .16 The review of shop drawings by the Project Manager is for sole purpose of ascertaining conformance with general design concept. This review shall not

mean that the Project Manager approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

- .17 Whenever there's a requirement for the contractor to submit stamped engineered drawings, such submissions shall be with the timelines of the project.

## **1.5 Samples**

- .1 When requested by the Project Manager, provide samples for Project Manager's approval, within 7 working days of a request.
- .2 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .3 Deliver samples prepaid to the Project Manager's business address.
- .4 Notify the Project Manager in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .5 Where colour, pattern or texture is criterion, submit full range of samples.
- .6 Adjustments made on samples by the Project Manager are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Project Manager, and obtain the Project Manager's approval prior to proceeding with Work.
- .7 Make changes in samples which Project Manager may require, consistent with Contract Documents.
- .8 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

## **2 Products – Not Used**

## **3 Execution**

### **3.1 Submissions**

- .1 Submit the following to the Project Manager:
  - .1 Upon notification of award, prior to Commencing Work
    - .1 Permits (if required)
    - .2 Workmen Trade Certificates (on request)
    - .3 Construction Schedule and Shop Drawing schedule
    - .4 Notice of Project
  - .2 During Construction
    - .1 Progress Reports
    - .2 Update of any Insurance Certificates about to expire
    - .3 Shop Drawings, Product Data and Samples
    - .4 Minutes of Meetings
    - .5 Inspection Reports
    - .6 Change Orders and Change Directives
    - .7 Requests for Information (RFI)
    - .8 Updated construction drawings
    - .9 Updated construction schedule
  - .3 At Completion:
    - .1 Update of any Insurance Certificates about to expire
    - .2 Current Valid WSIB Clearance Certificates
    - .3 Completion Release of Claims Letter
    - .4 Region of Durham Standard Form for Property Owner's Release of and used by the Contractor
  - .4 At the end of the Warranty Period
    - .1 Final Release of Claims Letter

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Health and safety administrative requirements for contractors performing work for the Region of Durham.

### **1.2 Health and Safety Policy**

- .1 Obtain copies of all Subcontractors' Health and Safety Policies and Programs prior to such Subcontractor commencing work on the site if and when requested.
- .2 Provide a copy of Contractor's current Health and Safety Policies and Program, to implement that policy prior to the commencement of construction.
- .3 Comply with all Federal and Provincial Health and Safety Acts, Regulations and Lower Tier Municipality By-Laws and with all applicable industry safety standards.
- .4 Comply with 213/91 (Construction Projects) made under the Occupational Health and Safety Act (OHSA) and all amendments thereto. Copies of the Regulations may be obtained from the Ministry of Labour at their Scarborough office, Publications Ontario at 880 Bay Street, Toronto, Ontario M7A 1N8 (Tel. 416-326-5300).
- .5 Provide any and all personal protective equipment for Contractor's own workers where prescribed.

### **1.3 SDS**

- .1 Provide to the Project Manager a list of Designated Substances that will be brought to the site prior to commencing work. Safety Data Sheets (SDS) and the hazardous material inventory for each substance listed must be kept on the site.
- .2 Maintain copies of current SDS on site at a location accessible to all workers, the Project Manager and the site supervisor.

### **1.4 List of Designated Substances at the Site**

- .1 In accordance with the requirements of Section 30(1) of the Occupational Health and Safety Act, the Bidder is hereby advised that the designated substances as listed hereunder are or may be present on the site and within the limits of this Contract:

Designated Substance	Identified at this Site?	Location
Acrylonitrile	No	
Arsenic	No	
Asbestos	Yes	Drywall Joint Compound
Benzene	No	
Coke Oven Emissions	No	
Ethylene Oxide	No	
Isocyanate	No	
Lead	No	
Mercury	No	
Silica	No	
Vinyl Chloride	No	

- .2 The Contractor shall comply with the governing Ministry of Labour Regulations respecting protection of workers, removal, handling and disposition of any Designated Substances encountered in carrying out the Work proposed on this contract.
- .3 Prior to commencement of this work, provide written notification to the Ministry of the Environment at their York-Durham District Office, 230 Westney Rd. S., 5th floor, Ajax, Ontario L1S 7J5, of the location(s) proposed for disposal of Designated Substances. Provide a copy of the notification to the Project Manager a minimum of two weeks in advance of such work starting.
- .4 In the event that the Ministry of the Environment has concerns with any proposed disposal location, further notification shall be provided until the Ministry of the Environment's concerns have been addressed.
- .5 Should a Designated Substance not herein identified be encountered the Contractor shall immediately notify the Project Manager and the site supervisor of their findings. Management of such substance shall be treated as Extra Work.
- .6 The Region has provided an Asbestos Building Materials Survey and Assessment Report as Attachment 1. Review this report for specific designated substances and locations.



## **1.5 Health and Safety Warnings**

- .1 The Project Manager shall have the right to document the Contractor and their Subcontractors for all health and safety warnings and/or to stop any Contractor's work if the Contractor fails to comply with any requirements under this Section.
- .2 Similarly, the Project Manager shall have the right to issue warnings and/or to stop work for any Contractor violations of the contract including Regional health and safety policy and programs and/or if the Contractor creates a health or safety hazard.
- .3 Written warnings and/or stop work orders shall be given to the Contractor using the Region's Contractor Health and Safety Warning / Stop Work Order Form.
- .4 If the Contractor fails to adequately respond to the Project Manager's order to correct a hazard, the Region reserves the right to have the hazard corrected by a third party at the Contractor's expense. The Project Manager's decision as to the urgency for such correction shall be final.

## **1.6 Notice of Project**

- .1 Notify all regulatory bodies required for construction activities, (e.g. Ministry of Labour Notice of Project, employer notification). Notifications shall include, but not be limited to, the notification requirements laid out in OHS Act Sec 51-53 and the requirements of Ontario Regulation 213/91 for Construction Projects, Sections 5, 6 and 7. For the purpose of this Contract, the Contractor shall be deemed the "Constructor".

## **1.7 Fire Safety Requirements**

- .1 Protect persons and properties.
- .2 Maintain operable fire protection equipment.
- .3 Maintain fire fighters' access.
- .4 Provide temporary fire extinguishing equipment.
- .5 Maintain existing and temporary fire exit.
- .6 Where the work requires the Contractor to shut down fire and life safety systems, provide a fire watch for the duration of the shutdown.
- .7 In occupied buildings, schedule the use of flame, such as torches and volatile substances well in advance with the approval of the Project Manager.

- .8 Maintain a fire watch after all welding operations for a period of not less than 7 hours.

**2 Products – Not Used**

**3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Laws, notices, permits and fees.
- .2 Discovery of hazardous materials.
- .3 Codes and standards.
- .4 Regulations.
- .5 Permits.

### **1.2 Related Requirements**

- .1 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Laws, Notices and Fees**

- .1 The laws of the Place of the Work shall govern the Work.
- .2 The Contractor shall be responsible for obtaining all permits, licenses and certificates necessary for the performance of the Work which were in force at the date of executing the Agreement.
- .3 Provide the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.
- .4 If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes.
- .5 Determine detailed requirements of authorities having jurisdiction.
- .6 Pay all fees associated with applications, permits and inspections required by authorities having jurisdiction.
- .7 Pay construction damage deposits levied by municipality in connection with the issuance of a building permit.
- .8 Keep a copy of all permits on site.

#### **1.4 Hazardous Material Discovery**

- .1 Asbestos: If material resembling asbestos is encountered which has not been identified in the Contract Documents, immediately stop work and notify the Project Manager.

#### **1.5 Codes and Standards**

- .1 Perform work in accordance with the requirements contained in the latest editions of the following statutes and codes as amended from time to time:
  - .1 Ontario Building Code
  - .2 Municipal Building and Fire Codes and By-Laws
  - .3 Electrical Safety Authority
  - .4 Ontario Electrical Safety Code
  - .5 National Fire Protection Association
  - .6 National Building Code
  - .7 Ontario Construction Safety Act
  - .8 Ontario Fire Code
  - .9 Ontario Hydro
  - .10 WHIMS
- .2 Ensure that all work performed is in strict accordance with all applicable building codes and government mandated standards, and authorities having jurisdiction. See RFP-303-2016- A for further details.
- .3 Be responsible for all variances and submit application to Technical Standards & Safety Authority (TSSA).
- .4 Revise the installation at no additional cost to the Region until they meet the requirements and approval of the TSSA, the ESA and Oshawa Fire Department. Provide copies of all authority sign-offs.
- .5 Review Quotation Documents for any conflicts with the above regulations and where there are apparent discrepancies, notify the Project Manager in writing and obtain clarification before proceeding with the Work.

#### **1.6 Precedence of Standards**

- .1 Where applicable, ensure that all Products conform to the applicable Standards listed.

- .2 Canadian standards take precedence over American standards in the case of duplication or conflict.

### **1.7 Statutory Regulations**

- .1 Construction of the Work and the operations connected therewith are subject to the approval, inspection, by-laws, and regulations of municipal, provincial and federal authorities and organizations concerned with roads, streets, railways, telephones, electrical supplies, gas supplies and other public services having jurisdiction in respect to any matter in this contract.

### **1.8 Permits**

- .1 Obtain all necessary permits and approvals required for this project from the authorities having jurisdiction for all completed work.
- .2 Obtain and pay for all permits as required, fees and inspections required by all authorities having jurisdiction.
- .3 Provide a copy of Building Permit to the Project Manager immediately upon receipt.
- .4 Keep a copy of all permits on site.

## **2 Products**

### **2.1 Equipment**

- .1 Provide electronically powered equipment, components, and supplies that are CSA and ULC approved.

## **3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mill tests.

### **1.2 Related Requirements**

- .1 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Standards References**

- .1 ISO/IEC 17025-2005 - General Requirements for the Competence of Testing and Calibration Laboratories.
- .2 SCC (Standards Council of Canada).

### **1.4 Review by Project Manager**

- .1 Project Manager may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.
- .2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.
- .3 If such Work is found in accordance with Quotation Documents, the Region will pay cost of review and replacement.

### **1.5 Quality of Products and Materials**

- .1 All materials, fixtures, fittings, appliances and apparatus supplied and installed by the Contractor shall be new, the best of their kind for the application and free from any defects.

### **1.6 Quality Control Inspection and Testing**

- .1 At reasonable times, and giving reasonable notice of at least twenty-four (24) hours, the Project Manager may inspect the work site and/or those areas of the Contractor's place of business that are related to the performance of a contract. If the Project Manager requires an inspection, the Contractor must provide reasonable assistance and arrangements for the inspection to take place.

- .2 Where required by the Project Manager, the Contractor shall supply certified copies of all tests upon, all materials to be used in the construction of the works, indicating that materials comply with the Specifications. Such tests shall be made by a testing company which has been approved by the Project Manager and shall be at the Contractor's expense.
- .3 Any and all materials or manufactured products, including pipe, may be tested by the Region. The Contractor shall, at his own expense, supply samples for Quality Assurance (QA) testing as directed of any and all materials or manufactured products which he is using or proposes to use in the work, and he shall not be entitled to any extra remuneration nor any extension of the time allowed to complete the work, as a result of any delays which may be caused or occasioned as a result of compliance with these Specifications
- .4 Materials whose test specimens fail to meet specified requirements and those materials which are rejected upon inspection shall not be permitted to remain on the site of the work, and shall be immediately removed there from by the Contractor at his own expense.

#### **1.7 Receipt and Acceptance of Materials**

- .1 During the process of unloading any Products, inspect, in the presence of the Project Manager, Products for loss or damage in transit. Notify the agent of the carrier of any loss or damage to the shipment.
- .2 All materials supplied by the Contractor and found faulty or defective upon delivery will be rejected by the Project Manager.
- .3 Replace all rejected materials at no cost to Region.
- .4 Failure of the Project Manager to discover faulty or defective materials shall not relieve the Contractor of responsibility for removing all such materials and replacing same with good materials at Contractor's cost and expense.
- .5 Unload all equipment carefully in an approved manner to avoid damage.
- .6 Provide ample facilities for handling materials and equipment.

#### **1.8 Metric vs. Imperial Equipment**

- .1 Notwithstanding the requirements set out in the preceding Articles, because not all trades have adopted metric material or in cases of adapting to existing, where metric and imperial types of equipment are to be installed under the same contract, the Contractor shall ensure that mating of metric and non-metric equipment is possible.

## **1.9 Quality Assurance Testing by the Region**

- .1 The Project Manager may request any required samples at any reasonable time.
- .2 The Region will perform Quality Assurance testing using its own forces which are CSA certified. Alternatively, the Region may appoint a CSA-certified agency to conduct QA testing on its behalf. Quality Assurance testing will be at a frequency determined by the Project Manager.
- .3 The costs of all Quality Assurance testing, except as noted otherwise, shall be borne by the Region.
- .4 The Contractor may request that the Region's, or their agent's, Quality Assurance equipment be tested for CSA compliance. All costs for such tests shall be at the Contractor's expense where such equipment is found to be in compliance.
- .5 Provide clear access to work areas to be inspected and assist as required by providing safety equipment, ladders, materials, and other reasonable equipment requested by the Project Manager to facilitate these inspections, including but not necessarily limited to, welding x-ray inspections, concrete testing, painting inspections and compaction tests.
- .6 Additional testing required to prove the adequacy of construction shall be at the Contractor's expense, where the routine test shows the construction to be inadequate, or where the Contractor's materials and procedures have not been as specified, or when work has proceeded without approval or inspection.
- .7 Where the Region's Quality Assurance testing differs from the Contractor's Quality Control results, the Region's results shall govern and all additional Quality Assurance testing shall be billed to the Contractor at a rate of not less than \$250 per re-test except where such re-tests are carried out by the Region's agency in which case such re-tests shall be billed at a rate of 110% of the invoiced amount.

## **2 Products – Not Used**

## **3 Execution – Not Used**

**End of Section**



## 1 General

### 1.1 Section Includes

- .1 .1 Procedures for substitutions submitted after award of the Quotation.

### 1.2 Related Requirements

- .1 Section 01 41 00 – Regulatory Requirements
- .2 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### 1.3 Substitution Procedures

- .1 Use and install all proprietary Products in strict accordance with the manufacturer's printed instructions. Provide to the Project Manager a copy of all manufacturers' printed instructions and supplementary directions prior to use or installation.
- .2 Whenever more than one Product is specified for one use, the Contractor may select to use any of the Products specified unless the specifications or Quotation Drawings indicate otherwise.
- .3 Assume all responsibility for liabilities and additional costs that may arise as a result of choice to use one of the named Products.
- .4 The Contractor may apply to the Project Manager to substitute as an "approved equivalent", another Product or group of Products. Such application shall be in writing and shall indicate reasons why the Contractor has proposed the substitution (e.g. significant delay in delivery, strikes, unavailability, improved quality or field service, amount of contract cost reduction). The Contractor's application for a substitution shall be accompanied by sufficient descriptive and technical information, specifications, references and samples for the Project Manager to thoroughly compare the proposed substitute Product or group of Products with that specified.
- .5 The Project Manager's assessment of proposed substitutions shall include, but not be limited to, criteria such as quality and durability, performance, ease of operation, safety features, technical support, service and parts, availability and estimated cost of warranty and adherence to minimum specifications. Failure to comply with this requirement to the Project Manager's satisfaction may result in rejection of the proposed substitution due to insufficient information or time to evaluate the proposal. **All applications and submissions related to the**

**proposed substitution shall only be made by the Contractor and not by any Subcontractors or Suppliers.**

- .6 The approval or rejection of a proposed substitution shall be at the discretion of the Project Manager whose decision shall be final.
- .7 Acceptance by the Project Manager of an “approved equivalent” shall apply to this project only.
- .8 Assume all responsibility for liabilities and additional costs that may subsequently arise as a result of Contractor’s proposed substitution being accepted by the Project Manager.
- .9 Any design or construction changes necessitated by the use of substituted Products shall be at the expense of the Contractor.
- .10 Be responsible for assuring the proper fit and matching of all substituted Products to the surrounding pipe, equipment or materials.
- .11 Failure to comply with any of the above requirements may result in rejection and non-consideration of the proposed equivalent.
- .12 Assume full responsibility and costs when accepted substitutions affect other work on project.
- .13 Amount of credits arising from approval of substitutions will be determined by the Project Manager and the Contract Price will be reduced accordingly. No substitutions will be permitted without prior written approval from the Project Manager.

**2 Products – Not Used**

**3 Execution – Not Used**

**End of Section**

## **1 General**

### **1.1 Delivery Requirements**

- .1 Fully indemnify the Region of Durham for all damages to persons or property resulting from the services and operations performed by employees of the Contractor and all Subcontractors and suppliers, and all contracted agents or carriers, including the delivery and unloading of goods or equipment at (and transfer and unloading of bulk chemicals or fuels to) Regional facilities.
- .2 Employ delivery vehicles that are suitably licensed, insured, operated and maintained in accordance with the Contract requirements, the Contractor's (and its agent's or carrier's) applicable policies and procedures, and all applicable federal, provincial and municipal legislation, statutes and by-laws.
- .3 Ensure that the Contractor's forces receive and sign off on all deliveries and shipments required for the Work. The Region of Durham will not be responsible for the sign off on any deliveries for the Contractor.
- .4 Equip all delivery vehicles with any other material handling equipment required for the delivery person to safely unload the shipment at the receiving location(s) at the Place of the Work and move the Products to the designated receiving area(s) identified in the Contract.
- .5 Equip delivery vehicles, where required, with a hydraulic tailgate for unloading heavy equipment, packages, drums, pallets, and other large or heavy Products at receiving locations which are not equipped with a truck loading dock.

## **2 Products – Not Used**

## **3 Execution– Not Used**

**End of Section**

## 1 General

### 1.1 Section Includes

- .1 Inspections and declarations.
- .2 Maintenance materials, spare parts and special tools.
- .3 Operation and maintenance manual format.
- .4 Contents each volume.
- .5 Recording actual site conditions.
- .6 As-built documents and samples.
- .7 Final inspection.

### 1.2 Related Requirements

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 45 00 – Quality Control.
- .3 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### 1.3 Inspection and Declaration of Completion

- .1 A Certificate of Completion will be issued once all requirements outlined under this section have been met.
- .2 **Contractor's Inspection:** The Contractor and all Subcontractors shall conduct an inspection of the Work, identify deficiencies and defects, issue list of deficiencies and repair as required to conform to the Contract Documents.
- .3 Notify the Project Manager in writing of satisfactory completion of the Contractor's Inspection and that corrections have been made.
- .4 Request the Project Manager's Inspection.
- .5 **Project Manager's Inspection:** The Project Manager and the Contractor will perform an inspection to identify obvious defects or deficiencies and generate a list of deficiencies and the Contractor will correct the Work accordingly.
- .6 Project Manager will identify in inspection report all items deemed to affect issuance of Completion.

- .7 **Project Completion:** Submit a written letter that the following has been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Equipment and systems have been tested, adjusted, and are fully operational.
  - .4 Certificates required by authorities having jurisdiction have been submitted.
  - .5 Operation of systems have been demonstrated to Region's personnel.
  - .6 All required documentation has been submitted.
  - .7 Work is complete and ready for Final Completion Inspection.
- .8 **Completion Inspection:** When items noted in paragraph 1.3.7 are completed, request a Project Completion Inspection of the Work by the Project Manager. If Work is deemed incomplete by Project Manager, complete outstanding items within five (5) business days and request re-inspection.
- .9 **Declaration of Completion:** When the Project Manager considers deficiencies and defects have been corrected and all project requirements have been met, make application for Certificate of Completion of the Work.
- .10 **Commencement of Warranty Period:** The date of Completion of the Work, as certified by the Region shall be the date for commencement of the warranty period.
- .11 **Final Inspection**
  - .1 Organize a final inspection to take place two weeks prior to the expiration of the warranty period.
  - .2 The Project Manager shall attend.
  - .3 The Project Manager shall generate a list of all defects and deficiencies identified during inspection.
- .12 **Final Payment:** When the Project Manager considers final deficiencies and defects have been corrected and it appears all Contractor obligations under the Contract have been fulfilled, the Region will issue a Final Acceptance Certificate and issue final payment.

#### **1.4 Closeout Submittals**

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned after final inspection with Project Manager's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .5 Pay costs of transportation.

#### **1.5 Operations and Maintenance Manual**

- .1 Provide 1 hard copy of the manufacturer's operating manuals for all equipment installed.
- .2 Provide a single PDF file of the complete Operations and Maintenance Manual after acceptance by the Region of the hard copy. PDF file shall not have any security protection applied (i.e. no passwords).

#### **1.6 Recording Actual Site Conditions**

- .1 Record information on set of black line drawings provided by Region.
- .2 Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.
- .3 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.
- .4 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - .3 Field changes of dimension and detail.
  - .4 Changes made by change orders.
  - .5 Details not on original Contract Drawings.
  - .6 References to related shop drawings and modifications.
- .5 Specifications: legibly mark each item to record actual construction, including:

- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
- .2 Changes made by Addenda and change orders.
- .6 Other Documents: Maintain manufacturer's certifications and inspection certifications required by individual specifications sections.

## **2 Products**

### **2.1 Materials and Finishes**

- .1 Building Products, Applied Materials, and Finishes: Provide product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Provide instructions for cleaning agents and methods; precautions against detrimental agents and methods; and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.

## **3 Execution**

### **3.1 Delivery to Site**

- .1 Deliver spare parts, maintenance materials, and special tools to location as directed; place and store.

### **3.2 Storage, Handling and Protection**

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.

- .5 Remove and replace damaged products at own expense and to satisfaction of Project Manager.

**End of Section**



## **1 General**

### **1.1 Section Includes**

- .1 Finish carpentry items.
- .2 Hardware and attachment accessories.

### **1.2 Related Requirements**

- .1 Section 01 11 00 – Summary of Work.
- .2 Section 01 14 00 – Work Restrictions.
- .3 Section 01 62 00 – Product Substitution Requirements
- .4 Section 01 65 00 – Product Delivery Requirements.
- .5 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Reference Standards**

- .1 ANSI A135.4 - Basic Hardboard Standard, Edition 12.
- .2 ASTM E84-15a - Standard Test Method for Surface Burning Characteristics of Building Materials.
- .3 BHMA A156.9-2010 - Cabinet Hardware.
- .4 CAN/CGSB 11.3-M87 - Hardboard.
- .5 CAN/CSA-O80 Series-08 (R2012) - Wood Preservation.
  - .1 CSA-O80.1-15 - Specification for Treated Wood.
  - .2 CSA-O80.3-15 - Preservative Formulations.
- .6 CSA-O121-08 (R2013) - Douglas Fir Plywood.
- .7 CSA-O141-05 (R2009) - Softwood Lumber.
- .8 CSA-O151-09 - Canadian Softwood Plywood.
- .9 CSA-O153-13 - Poplar Plywood.
- .10 NPA A208.1-2009 - Particleboard.
- .11 NPA A208.2-2009 - Medium Density Fibreboard (MDF) for Interior Applications.
- .12 AWMAC - Architectural Woodwork Standards (AWS) – Edition 2, 2014.

- .13 CHPVA (Canadian Hardwood Plywood and Veneer Association) - Official Grading Rules for Canadian Hardwood Plywood-2010.
- .14 NEMA LD3-2005 - High Pressure Decorative Laminates (HPDL).
- .15 NLGA (National Lumber Grades Authority) - Standard Grading Rules for Canadian Lumber, 2010 edition.
- .16 NHLA (National Hardwood Lumber Association).

#### **1.4 Submittals for Review**

- .1 Section 01 33 00: Submission procedures.
- .2 Shop Drawings:
- .3 Indicate materials, component profiles, fastening methods, jointing details, accessories to a minimum scale of 1:8.

#### **1.5 Submittals for Information**

- .1 Section 01 33 00: Submission procedures.

#### **1.6 Closeout Submittals**

- .1 Section 01 78 00: Closeout Submittals

#### **1.7 Quality Assurance**

- .1 Perform work to Custom quality.
- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years' experience.
- .3 Pressure Preservative Treated Wood: Marked with certification mark authorized by the Canadian Wood Preservers Bureau (CWPB) indicating producer, preservative type, retention and Use Category (UC).
- .4 Contractor shall confirm all dimensions, colours, finishes, hardware and materials requires to perform the work as specified.

#### **1.8 Regulatory Requirements**

- .1 Conform to applicable code for fire retardant requirements.

#### **1.9 Delivery, Storage, and Handling**

- .1 Section 01 45 00: Transport, handle, store, and protect products.
- .2 Protect work from moisture damage.

## **2 Products**

### **2.1 Lumber Materials**

- .1 Softwood Lumber: CSA-O141; Graded to AWMAC Custom installation; Ponderosa Pine species, maximum moisture content of 19%.
- .2 Hardwood Lumber: to NHLA requirements; Graded to AWMAC, Custom installation; White Birch species, maximum moisture content of 9%.

### **2.2 Sheet Materials**

- .1 Softwood Plywood: CSA-O121 (R2013); good two sides select tight face select sheathing, high density overload medium density overlaid.
- .2 Hardwood Plywood: O115-M1982 (R2014); ¾" thick plywood, rotary cut face White Birch species veneer, 0.9 mm thick, good two sides for work with two sides exposed to view, good one side for work with one side exposed to view. Use composite veneer core. Select veneers to provide random match.
- .3 Industrial Particleboard: NPA A208.1, cellulosic composite panel bonded together with a synthetic resin, grade to suit application; sanded faces.
- .4 Medium Density Fibreboard (MDF): NPA A208.2-2009; composed of wood particles reduced to fibres, made with high waterproof resin binders; of grade to suit application; sanded faces.
- .5 Melamine Panel Board: melamine overlay, heat and pressure laminated with phenolic resin to thickness indicated on drawings on particleboard core. Edge finish all exposed boards, overlay bonded to exposed face with plain (buff) balancing sheet on other side.

### **2.3 Plastic Laminate Materials**

- .1 Plastic Laminate #1 shall meet the following requirements:
  - .1 General Purpose Grade: HGS complying with NEMA LD3.
  - .2 Sheet Thickness: 1.2 mm (0.048 inches).
  - .3 Sheet Width: As selected from manufacturer's standard widths of 762 mm (30 inches), 914 mm (36 inches), 1219 mm (48 inches), and 1524 mm (60 inches).
  - .4 Sheet Length: As selected from manufacturer's standard lengths of 2438 mm (96 inches), 3048 mm (120 inches) and 3658 mm (144 inches).
  - .5 Colour and Texture: Minimum three (3) samples shall be sent to the Project Manager for approval.

- .6 Manufacturers: Poinite, Arborite, Formica, Nevamar.
- .2 Plastic Laminate #2 shall meet the following requirements:
  - .1 Horizontal, General Purpose, Post Forming Grade: HGP complying with NEMA LD3.
  - .2 Sheet Thickness: 1 mm (0.039 inches).
  - .3 Sheet Width: As selected from manufacturer's standard widths of 762 mm (30 inches), 914 mm (36 inches), 1219 mm (48 inches), and 1524 mm (60 inches).
  - .4 Sheet Length: As selected from manufacturer's standard lengths of 2438 mm (96 inches), 3048 mm (120 inches) and 3658 mm (144 inches).
  - .5 Colour and Texture: Minimum three (3) samples shall be sent to the Project Manager for approval.
  - .6 Manufacturers: Poinite, Arborite, Formica, Nevamar.
- .3 Laminate Backing Sheet: NEMA LD3, BKH, not less than 0.75 mm thick, white, undecorated.
- .4 Melamine panel-boards:
  - .1 Sheet Width: As selected from manufacturer's standard widths of 762 mm (30 inches), 914 mm (36 inches), 1219 mm (48 inches), and 1524 mm (60 inches).
  - .2 Sheet Length: As selected from manufacturer's standard lengths of 2438 mm (96 inches), 3048 mm (120 inches) and 3658 mm (144 inches).
  - .3 Color: White
  - .4 Manufacturers: Panolam, Richelieu, Uniboard.

## **2.4 Adhesive**

- .1 Adhesive: Type recommended by laminate manufacturer to suit application.

## **2.5 Fasteners**

- .1 Fasteners: to CSA 086-09, of size and type to suit application.
- .2 Concealed Joint Fasteners: Threaded, galvanized steel.

## **2.6 Hardware**

- .1 Handle Pull: Contemporary Style, Stainless Steel finish, ref # 319912170 manufactured by Richelieu.

- .2 Hinges: 120° Self Closing style, nickel finish; ref no# 71T555180 manufactured by Richelieu.
- .3 Shelf Support: zinc finish; ref no# 2552G18 & CP2562G manufactured by Richelieu.

## **2.7 Fabrication**

- .1 Submit millwork shop drawings, laminate, and stain samples for approval by the Project Manager.
- .2 Fabricate to AWMAC, Custom standards.
- .3 Shop assemble work for delivery to site, permitting passage through building openings.
- .4 Cap exposed plastic laminate finish edges with material of same finish and pattern.
- .5 When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- .6 Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
- .7 Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

## **2.8 Shop Finishing**

- .1 Sand work smooth and set exposed nails and/or screws.
- .2 Apply wood filler in exposed nails and/ or screws indentations.

## **3 Execution**

### **3.1 Examination**

- .1 Verify that field measurements are as indicated.
- .2 Verify adequacy of backing and support framing.
- .3 Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.
- .4 Verify all colours, finishes, hardware and materials required to perform the work as specified.

### **3.2 Installation**

- .1 Install work to AWMAC, Custom Quality Standard.
- .2 Set and secure materials and components in place, plumb and level.
- .3 Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- .4 Install hardware to manufacturer's written instructions.
- .5 Provide cut-outs for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures as required.
- .6 Protect all millwork from damage.
- .7 Touch up and restore surfaces where damaged and clear all surfaces prior to completion.
- .8 Location of plastic laminate seams on work surfaces shall be inspected and approved by designer.

### **3.2 Preparation for Site Finishing**

- .1 Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.

### **3.3 Erection Tolerances**

- .1 Maximum Variation from True Position: 1/16 inch.
- .2 Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

**End of Section**

## **1 General**

### **1.1 Section Includes**

- .1 Water Closets.
- .2 Toilet Seats.
- .3 Lavatories.
- .4 Faucets.

### **1.2 Related Requirements**

- .1 Section 01 11 00 – Summary of Work.
- .2 Section 01 14 00 – Work Restrictions.
- .3 Section 01 62 00 – Product Substitution Requirements
- .4 Section 01 65 00 – Product Delivery Requirements.
- .5 This section describes requirements applicable to all Sections within Divisions 06 and Division 22.

### **1.3 Reference Standards**

- .1 The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
- .2 Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
- .3 ANSI A112.6.1 - Supports for Off-the-Floor Plumbing Fixtures for Public Use
- .4 ANSI A112.18.1 - Finished and Rough Brass Plumbing Fixture Fittings
- .5 ANSI A112.19.1 - Enameled Cast Iron Plumbing Fixtures
- .6 ANSI A112.19.2 - Vitreous China Plumbing Fixtures
- .7 ANSI A112.19.3 - Stainless Steel Plumbing Fixtures (Designed for Residential Use)
- .8 ANSI A112.19.4 - Porcelain Enameled Formed Steel Plumbing Fixtures
- .9 ANSI A112.19.5 - Trim for Water-Closet Bowls, Tanks, and Urinals

#### **1.4 Submittals for Review**

- .1 Section 01 33 00: Submission procedures.
- .2 Shop Drawings:
  - .1 Indicate materials, component profiles, fastening methods, jointing details, accessories to a minimum scale of 1:8.
- .3 Provide manufacturer's data sheets indicating Code and Standards Compliance, illustrations of fixtures, physical sizes, rough-in dimensions, utility sizes, trim and finishes.

#### **1.5 Submittals for Information**

- .1 Section 01 33 00: Submission procedures.

#### **1.6 Closeout Submittals**

- .1 Section 01 78 00: Closeout Submittals

#### **1.7 Quality Assurance**

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years' experience.
- .2 Fixtures: By same manufacturer throughout for each product specified.
- .3 Trim: By same manufacturer throughout for each product specified.
- .4 Contractor shall confirm all colours, finishes, hardware and materials required to perform the work as specified.

#### **1.8 Regulatory Requirements**

- .1 Conform to applicable code for plumbing requirements.

#### **1.9 Delivery, Storage, and Handling**

- .1 Accept fixtures on Site in factory packaging. Inspect for damage.
- .2 Protect all fixtures and trim before and after installation from exposure to rain, freezing temperatures and direct sunlight.



## **2 Products**

### **2.1 Acceptable Manufacturers**

- .1 Water Closets: American Standard, Kohler, Glacier Bay
- .2 Child Water Closets: American Standard, Zurn, TOTO
- .3 Lavatories: American Standard, Kohler, Glacier Bay
- .4 Lavatory Faucets: American Standard, Kohler, Glacier Bay

### **2.2 Water Closets**

- .1 Water closets shall be vitreous china, white in colour, floor-mounted elongated bowl having siphon jet flushing action design and WaterSense Certified.
- .2 The flush rate shall be 1.6 gallons per flush or less.
- .3 Water closet seats shall be commercial/institutional grade, white in colour, have open front and stainless steel self-sustaining check hinges.

### **2.3 Child Water Closets**

- .1 Child water closets shall be vitreous china, white in colour, floor-mounted having siphon jet flushing action design.
- .2 The bowl height shall be no more than 10 ¼" from the floor.
- .3 The flush rate shall be 1.6 gallons per flush or less.
- .4 Water closet seats shall be commercial/institutional grade, white in colour, have open front and stainless steel self-sustaining check hinges.

### **2.4 Lavatories**

- .1 Lavatories shall be vitreous china, white in colour, self-rimming countertop lavatory, with centre faucet hole and front overflow.
- .2 Wall-mounted lavatories shall be vitreous china, white in colour, with centre faucet hole and rear overflow.

### **2.5 Lavatory Faucets**

- .1 DC powered electronic faucets with proximity operation.
- .2 Vandal resistant solid brass construction with safety timer.
- .3 Include hot and cold water indicators and faucet inlets with supplies and fixture holes.

### **3 Execution**

#### **3.1 Examination**

- .1 Verify that field measurements are as indicated.
- .2 Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- .3 Confirm that millwork is constructed with adequate provision for the installation of countertop lavatories, sinks, faucets and related trim and accessories.
- .4 Verify plumbing, and building items affecting work of this section are placed and ready to receive this work.

#### **3.2 Installation**

- .1 Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.
- .2 All installation shall be in accordance with manufacturer's published recommendations.
- .3 Furnish and install all labor, materials, equipment, tools and services and perform all operations required in connection with or properly incidental to the installation of complete plumbing fixtures, as indicated on Contract Drawings, reasonably implied therein or as specified herein, unless specifically excluded.
- .4 Each piece of trim shall be furnished whether specifically mentioned or not, in order to provide a complete first-class installation. Furnish and install all required water, waste, soil and vent connections to all plumbing fixtures, together with all fittings, supports, fastening devices, cocks, valves, traps, etc., leaving all in complete working order.
- .5 Supply and install hot and cold shut off valves (if not existing).
- .6 Coordinate mounting heights of plumbing fixtures with architectural details/elevations.
- .7 All exposed chrome plated, polished or enameled fixtures and trim shall be installed with special care, leaving no tool marks on finishes.
- .8 Thoroughly fill spaces between fixtures and walls, countertops and/or floors with waterproof, mold resistant, non-toxic, non-shrinkable white tile caulking.

### **3.3 Preparation for Site Finishing**

- .1 Rough-in fixture piping connections in accordance with minimum sizes required by code, and as recommended by the manufacturer.

### **3.4 Interface with other Products and Trades**

- .1 Confirm location and size of fixtures and openings before rough-in and installation.
- .2 Coordinate with Electrical Contractor and insure proper power is provided for electric drinking fountains, sensor operated faucets and sensor operated flush valves

### **3.5 Testing**

- .1 Adjust stops or valves for intended water flow rate to fixtures without splashing, noise or overflow.
- .2 Adjust and set sensor faucet mixing valves to provide desired water temperature at spout outlet.
- .3 Insure that all traps are filled with water and maintain trap seal. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven water tight by visual inspection.
- .4 After fixtures have been installed and water systems are pressurized, test each fixture and associated trim for proper operation and inspect for leaks. Replace malfunctioning fixtures and components, then retest. Repeat procedure until all components operate properly.

**End of Section**